

MasterBrace[®] FIB 900/50 FG

Unidirectional E-glass fiber fabric for the MasterBrace Composite Strengthening System

FORMERLY MBRACE EG900

YIELD

243 ft² (22.6 m²) per roll

PACKAGING

Available in rolls 20 in (500 mm) wide, 145.8 ft (44.4 m)

COLOR

White

SHELF LIFE

3 years when properly stored

STORAGE

Store in unopened containers in a cool, dry area between 50 to 90° F (10 to 32° C) away from direct sunlight, flame, or other hazards.

DESCRIPTION

MasterBrace FIB 900/50 FG is a dry fabric constructed of high quality E-glass fibers. These fabrics are applied onto the surface of existing structural members in buildings, bridges, and other structures using the MasterBrace family of performance polymers. The result is an externally bonded FRP (fiber reinforced polymer) reinforcement system that is engineered to increase the structural performance of these members. Once installed, the MasterBrace System delivers externally bonded reinforcement with outstanding long-term physical and mechanical properties.

PRODUCT HIGHLIGHTS

- High strength to weight ratio Can add significant strength to a structure without adding significant dead load
- Easy installation Can be installed quickly, even in areas of limited access;
- Low aesthetic impact Easy to conceal, will not significantly change existing member dimensions, will form around complex surfaces

SUBSTRATES

- Concrete
- Masonry
- Timber
- Steel

APPLICATIONS

- Improve the seismic ductility of concrete columns
- Improve the seismic response of concrete beamcolumn connections, shear walls and collector elements
- Improve the seismic performance of masonry shear walls and in-fill walls
- Provide additional confinement to concrete columns

STRUCTURES

- Vertical
- Horizontal
- Exterior
- Interior

TECHNICAL DATA

COMPOSITION

MasterBrace FIB 900/50FG is composed of a dense network of E-glass fibers held in a unidirectional alignment of a light glass fiber cross weave yarn

NOT ES:

- (1) The nominal fabric thickness is based on the total area of fibers (only) in a unit width. From experience, the actual cured thickness of a single ply laminate (fibers plus saturating resins) is 0.050-in to 0.070-in [1.25-mm to 1.75-mm].
- (2) The tensile properties given are those to be used for design. These values are derived by testing cured laminates (per ASTM D3039) and dividing the resulting strength and modulus per unit width by the nominal fabric thickness.
- (3) The 0° direction denotes the direction along the length of the fabric.
- (4) The 90° direction denotes the direction along the width of the fabric.

PHYSICAL PROPERTIES

| PROPERTY | VALUE |
|-------------------------------------------------------|-----------------------------------------------------|
| Fiber Material | E-Glass |
| Areal Weight | 0.186 lb/ft ² [900 g/m ²] |
| Fabric Width | 20 in 500 mm |
| Nominal Thickness, t_f⁽¹⁾ | 0.0147in/ply [0.373 mm/ply] |

FUNCTIONAL PROPERTIES

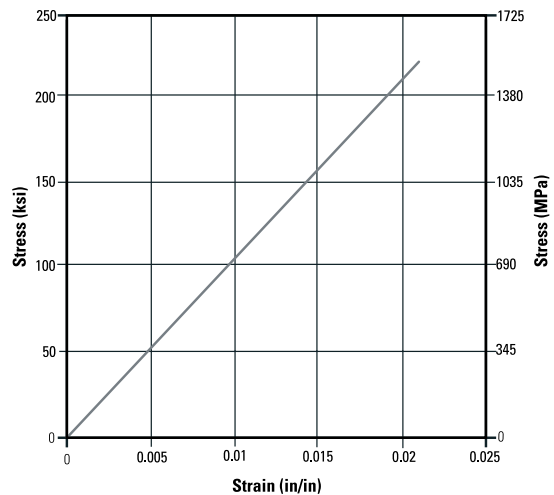
| PROPERTY | VALUE |
|------------|-----------------------------------------------------------|
| CTE | 5.9·10 ⁻⁶ /° F (3.27·10 ⁻⁶ /° C) |

0° TENSILE PROPERTIES⁽²⁾⁽³⁾

| PROPERTY | VALUE |
|-------------------------------------------------------------------------------------------|---------------------------------------|
| Ultimate Tensile Strength, f_{tu}[*] | 220 ksi [1517 MPa] |
| Tensile Modulus, E_f | 10500 ksi [72.4 GPa] |
| Ultimate Tensile Strength per Unit Width, f_{tu}[*] t_f | 3.06 kips/in/ply [0.536 kN/mm/ply] |
| Tensile Modulus per Unit Width, E_f t_f | 146 kips/in/ply [25.6 kN/mm/ply] |
| Ultimate Rupture Strain, ε_{tu}[*] | 2.10% |

90° TENSILE PROPERTIES⁽²⁾⁽⁴⁾

| PROPERTY | VALUE |
|----------------------------------|-------|
| Ultimate Tensile Strength | 0 |
| Tensile Modulus | 0 |
| Ultimate Rupture Strain | n/a |



HOW TO APPLY

SURFACE PREPARATION

MasterBrace FIB 900/50 FGs applied to surfaces treated with MasterBrace P 3500, MasterBrace P 3500 F2000 and MasterBrace SAT 4500. Consult the datasheets for these materials for additional details.

APPLICATION

MasterBrace FIB 900/50FG is only applied as a component of the MasterBrace System.

1. The MasterBrace FIB 900/50 FG material should be cut to the proper dimensions (dimensions will vary based on project requirements) using heavy duty shears or a utility knife.
2. Cut sections of MasterBrace FIB 900/50 FG can be temporarily stored by carefully rolling fabric into a 12 in [600 mm] (approximate) roll. Do not fold or crease the fabric. Fabric should be kept free of dust, oils, moisture, and other contaminants at all times.
3. Apply the MasterBrace FIB 900/50 FG fabric directly into uncured MasterBrace SAT 4500 applied on the substrate.
4. Using a rib roller or squeegee, press the fabric against the substrate until visual signs of MasterBrace SAT 4500 are observed bleeding through the fabric. The rib roller or squeegee should only be run along the direction of the primary fibers in the fabric.
5. Apply a layer of MasterBrace SAT 4500 over the top of the MasterBrace FIB 900/50 FG fabric to completely encapsulate the fabric. Consult with the MasterBrace SAT 4500 datasheet on details for applying MasterBrace SAT 4500.

MAINTENANCE

Periodically inspect the applied material and repair localized areas as needed. Consult a Master Builders Solutions representative for additional information. Visit us on the web for the most current product information and news: www.master-builders-solutions.com/en-us.

FOR BEST PERFORMANCE

- Make certain the most current versions of product data sheet and SDS are being used; call Customer Service (1-800-433-9517) to verify the most current version.
- Proper application is the responsibility of the user. Field visits by Master Builders Solutions personnel are for the purpose of making technical recommendations only and are not for supervising or providing quality control on the jobsite.

WARNING

MasterBrace Fiber Reinforcements contain carbon, glass, and/or aramid fibers. MasterBrace FIB 900/50FG contains glass fibers. While handling MasterBrace FIB 900/50FG, wear appropriate work clothing to minimize contact. Product Safety Data Sheets (SDS) are available and should be consulted and on hand whenever handling these products. These products are for professional and industrial use only and are only installed by trained and qualified applicators. Trained applicators must follow installation instructions.

HEALTH, SAFETY AND ENVIRONMENTAL

Health, Safety and Environmental Read, understand and follow all Safety Data Sheets and product label information for this product prior to use. The SDS can be obtained by visiting www.master-builders-solutions.com/en-us, e-mailing your request to mbsbscst@mbcc-group.com or calling 1(800)433-9517. Use only as directed.

IN CASE OF EMERGENCY: Call CHEMTEL +1 (800) 255-3924 or if outside the US or Canada, +1 (813) 248-0585.

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